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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,302	04/14/2004	Kyung-Tac Park	5000-1-586	5968
33942	7590	11/28/2007	EXAMINER	
CHA & REITER, LLC			BLEVINS, JERRY M	
210 ROUTE 4 EAST STE 103			ART UNIT	PAPER NUMBER
PARAMUS, NJ 07652			2883	
			MAIL DATE	DELIVERY MODE
			11/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/824,302	PARK, KYUNG-TAE
	<b>Examiner</b>	<b>Art Unit</b>
	Jerry Martin Blevins	2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

- 1) Responsive to communication(s) filed on 06 September 2007.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

- 4) Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 16-18 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-15 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 06 September 2007 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

## DETAILED ACTION

### ***Drawings***

The drawings were received on September 6, 2007. These drawings are accepted.

The objection to the drawings has been herewith withdrawn.

### ***Response to Arguments***

Applicant's arguments filed September 6, 2007 have been fully considered but they are not persuasive.

The microspheres (4) of the applied reference to Barker et al., US 5,555,335, are formed into the outer circumferential surface (3), as seen in Figures 1-3. Furthermore, Barker teaches that the microspheres are hollow, and thus, unfilled (column 4, lines 47 and 48, column 5, lines 9-17, and column 6, lines 50-67). As the microspheres recess from the cable, examiner considers them to be read on the claimed recesses of the present invention. Therefore, Barker does teach unfilled recesses formed into the outer circumferential surface of a cable.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,555,335 to Barker et al.

Regarding claim 1, Barker teaches a cable for use in air blowing installation (Figures 1-3) comprising: at least one transmission medium of electrical or optical signals (1); and a hollow cylindrical tube (2) having an inner space containing the transmission medium, an outer circumferential surface (3) surrounding the inner space, defining an outer diameter of the cable, including a plurality of unfilled recesses (elements 4, column 4, lines 47 and 48, column 5, lines 9-17, and column 6, lines 50-67) formed into the outer circumferential surface.

Regarding claim 14, Baker teaches that the protective layer is formed by applying a liquid-phase UV curable resin to the plural optical fibers and irradiating ultraviolet rays to the resin (column 3, lines 45-57).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barker in view of US Patent to Cain et al., number 5,062,685.

Regarding claim 2, Barker teaches the limitations of the base claim 1. Barker does not teach that the transmission medium comprises an optical fiber ribbon having a plurality of optical fibers and a protective layer surrounding the individual optical fibers. Cain teaches a textured surface optical transmission medium (the textured surface implies recesses formed on the outer circumferential surface, sufficient for air blowing installation, column 6, lines 54-61) comprising an optical fiber ribbon (1) having a plurality of optical fibers and a protective layer (2) surrounding the individual optical fibers. It would have been obvious to one of ordinary skill in the art at the time of the invention to include the ribbon fiber of Cain as the transmission medium of Barker. The motivation would have been to improve alignment and protection of the transmission medium.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barker in view of US Patent to Uemiya et al., number 5,345,545.

Regarding claims 3 and 4, Barker teaches the limitations of the base claim 1. Barker does not teach that the tube is made of amorphous material containing silicone. Uemiya teaches a layer surrounding optical fibers made of amorphous material

containing silicone (column 4, lines 44-55). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the tube of Barker with the amorphous silicone of Uemiya. The motivation would have been to provide an improved buffer layer (column 4, lines 44-55).

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barker in view of US Patent to Szum et al., number 6,399,666.

Regarding claims 5 and 6, Barker teaches the limitations of the base claim 1. Barker does not teach that the tube is made of polycarbonate, which has a molecular weight of more than 18000. Szum teaches a layer surrounding optical fibers made of polycarbonate, which has a molecular weight of more than 18000 (column 50, line 22 – column 51 – line 18, specifically column 50, lines 64-66). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the tube of Barker with the polycarbonate of Szum. The motivation would have been to improve the ease of removing optical fibers from the tube (column 50, lines 41-44)

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barker in view of US Patent to Benson, Jr. et al., number 5,905,826.

Regarding claims 7 and 8, Barker teaches the limitations of the base claim 1. Barker does not teach that the tube is made of polycarbonate containing silicone, wherein the content of the silicone is in a range of 0.01 to 0.5 percent by weight based on the weight of the polycarbonate. Benson teaches a layer surrounding optical fibers

made of polycarbonate containing silicone (column 6, lines 9-30). While Benson does not teach that the content of the silicone is in the specific range of 0.01 to 0.5 percent by weight based on the weight of the polycarbonate, Benson does teach the overlapping range of less than 10 percent (column 6, line 25). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the tube of Barker with the polycarbonate containing silicone, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. The motivation would have been to improve light transmission through the tube (column 5, line 60 – column 6, line 8).

Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barker in view of US Patent to Cooke et al., number 5,561,731.

Regarding claim 9, Barker in view of Benson teaches the limitations of the base claim 1. Barker does not teach that the tube is made of polycarbonate containing silicone having a frictional coefficient of less than 1. Cooke teaches a layer surrounding optical fibers made of material having a frictional coefficient of less than 1 (column 2, lines 5-24). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the tube of Barker with the material having a frictional coefficient of less than 1 of Cooke. The motivation would have been to improve the ease of inserting fiber in the tube (column 2, lines 5-24 and column 3, lines 31-37).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barker in view of Cooke.

Regarding claim 12, Barker teaches the limitations of the base claim 1. Barker does not teach that the tube has a clearance in the range of 0.5 mm to 1.5 mm. Although Cooke does not teach a tube with the exact clearance range, Cooke does teach a tube surrounding optical fibers with a clearance in the overlapping range of 0 mm – 1 mm (column 8, lines 13,14; 39, 40; 62, and column 9, line 10). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the tube of Barker such that it has a clearance in a range of 0.5 mm – 1.5 mm, an overlapping range of which is taught by Cooke, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. The motivation would have been to improve the ease of insertion of the fibers in the tube.

Claims 10, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barker in view of US Pre Grant Publication to Castellani et al., number 2004/0197059.

Regarding claims 10 and 11, Barker teaches the limitations of the base claim 1. Barker does not teach a water blocking filler provided in an interior empty space of the tube, wherein the water blocking filler includes a jelly compound. Castellani teaches a water blocking filler provided in an interior empty space of a tube surrounding optical fibers, wherein the water blocking filler includes a jelly compound (page 4, paragraph

56). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify cable of Barker with the water blocking filler of Castellani. The motivation would have been to reduce the possibility of water damage.

Regarding claim 13, Barker teaches the limitations of the base claim 1. Barker does not teach an outer diameter in a range of 1.5 mm to 4.0 mm. While Castellani does not teach the exact range, Castellani does teach a cable outer diameter in the overlapping range of 2.0 mm – 6.0 mm, and a preferred subset range of 2.5 mm – 4.0 mm (page 3, paragraph 50). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the cable of Barker such that the outer diameter is in a range of 1.5 mm – 4.0 mm, a subset of which is taught by Castellani, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. The motivation would have been to increase the number of fibers inside the tube.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barker in view of US Pre Grant Publication to Velikov, number 2002/0131703.

Regarding claim 15, Barker teaches the limitations of the base claim 1. Barker does not teach that the plurality of recesses has a crater shape. Velikov teaches a cable comprising a plurality of crater-shaped recesses (page 2, paragraph 22). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify

the cable of Barker with the crater-shaped recesses of Velikov. The motivation would have been to improve the alignment of the fibers (page 2, paragraph 22).

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Martin Blevins whose telephone number is 571-272-8581. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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